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WEATHEROLOGICAL DATA REPORT

19702A GSRS
Missile No. BR-4
Round No. b-37
4 September 1979

by

White Sands Meteorological Team

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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<p>(6) 19702A GSRS Missile Number BR-4 Round Number B-37, 4 September 1979.</p>		<p>INTERIM REPORT NUMBER</p> <p>CONTRACT OR GRANT NUMBER</p>	
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<p>COMMENTS</p>			
<p>1. Ballistics 2. Meteorology 3. Winds</p>			
<p>Meteorological data gathered for the launching of 19702A GSRS, Missile Number BR-4, Round Number B-37, are presented in tabular form.</p>			

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INTRODUCTION

19702A GSRS, Missile Number BR-4, Round Number R-37, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1145 MST, 4 September 1979. The scheduled launch time was 1145 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gr/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-5 ceil observation at:

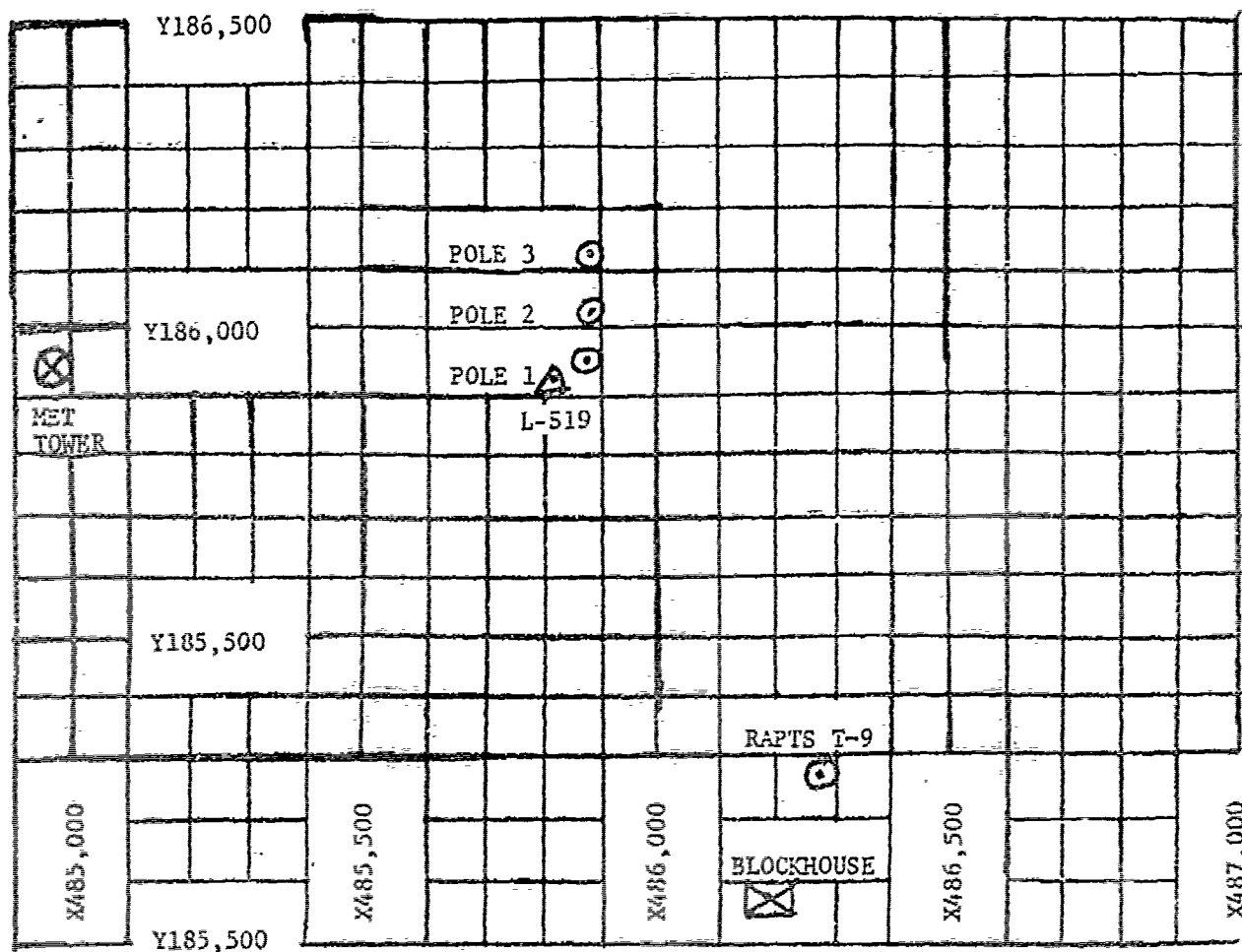
SITE AND ALTITUDE

LC-33 2040 Meters
NICK 2160 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 99,000 feet in 500-foot increments.

SITE AND TIME

SMR 1015 MST



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 55.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface observations taken at 1145 MDT.
4 September 1979, at LC-33, 19702A QSR5
Missile Number BR-4, Round Number B-37.

ELEVATION	3977.30	FT/MSL
PRESSURE	878.1	MBS
TEMPERATURE	28.2	°C
RELATIVE HUMIDITY	42	%
DEW POINT	14.0	°C
DENSITY	1007	GM/M ³
WIND SPEED	Calm	KTS
WIND DIRECTION		DEGREES
CLOUD COVER	1	Cu

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	134	03	-30	152	03	-30	135	02
-20	134	03	-20	146	03	-20	135	03
-10	132	04	-10	188	03	-10	125	03
0.0	159	04	0.0	126	03	0.0	126	03
+10	122	04	+10	-	02	+10	148	05

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft AGL

TABLE 2

TYPE 19702A GSRS MISSILE NO. BR-4 ROUND NO. B-37

LAUNCHED FROM LC-33 DATE 4 September 1979 TIME 1145 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1 12 Feet			LEVEL #2 62 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	317	01	-30	297	02
-20	298	02	-20	294	03
-10	313	03	-10	294	03
0.0	310	01	0.0	288	03
+10	310	01	+10	286	03
LEVEL #3 102 Feet			LEVEL #4 202 Feet		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
-30	328	01	-30		CALM
-20	319	02	-20		CALM
-10	319	01	-10		CALM
0.0	289	03	0.0		CALM
+10	302	01	+10		CALM

WTSM COORDINATES: X484,982.64 Y185, 1.73 N3983.00 (base)

TABLE 3

TYPE 19702A GSRS MISSILE NO. BR-4 ROUND NO. B-37

LAUNCHED FROM LC-33 DATE 4 September 1979 TIME 1745 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 4 September 1979 TIME 1135 MDT

RELEASE POINT COORDINATES (WSTM) 486,037.24 182,350.16 H= 3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. BR-4 ROUND NO. B-37

MISSILE LAUNCHED FROM LC-33 DATE 4 September 1979 TIME 1145 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
500		CALM
600		CALM
720	222	01
180	189	06
240	159	06
300	186	05
360	161	04
420	167	04
480	171	05
540	140	03
600		CALM
660	014	03
720	097	04
780	099	01
840	007	03
960	322	03
960	344	02
1020	316	03
1080	270	05

HEIGHTS AGL	DIRECTION DEGREES	SPEED KTS
1140	275	05
1200	290	04
1260	291	05
1320	306	06
1380	319	07
1440	319	07
1500	345	10
1560	345	12
1620	351	14
1680	352	15
1740	350	15
1800	354	12
1860	355	12
1920	356	12
1980	352	11
2040	346	09
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 4 September 1979

TIME 1145 MDT

RELEASE POINT COORDINATES (WSTM) X=486,037.24 Y=182,350.16 Z=3977.30

MISSILE TYPE 19702A GSRS MISSILE NO. BR-4 ROUND NO. B-37

MISSILE LAUNCHED FROM LC-33 DATE 4 September 1979 TIME 1145 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	172	03
120	119	02
180	MISG	MISG
240	MISG	MISG
300	MISG	MISG
360	MISG	MISG
420	MISG	MISG
480	MISG	MISG
540	MISG	MISG
600	211	01
660	200	04
720	165	04
780	225	03
840	156	02
900	008	03
960	349	02
1020	003	02
1080	305	03

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	279	04
1200	278	06
1260	299	04
1320	327	05
1380	321	08
1440	323	07
1500	340	09
1560	341	11
1620	349	14
1680	346	15
1740	354	16
1800	355	14
1860	352	12
1920	350	14
1980	002	10
2040	345	10
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM NICK DATE 4 September 1979 TIME 1135 MDT

RELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57

MISSILE TYPE 19702A GSR MISSILE NO. BR-4 ROUND NO. B-37

MISSILE LAUNCHED FROM LC-33 DATE 4 September 1979 TIME 1145 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
		CALM
60		CALM
120		CALM
180	333	03
240	315	03
300	017	02
360	011	02
420		CALM
480	276	01
540	312	01
600		CALM
660		CALM
720	183	02
780	175	03
840	193	03
900	173	04
960	191	04
1020	148	04
1080	158	03

HEIGHTS AGL	DIRECTION DEGREES	WIND KTS
1140	143	03
1200	140	03
1260	122	04
1320	117	05
1380	105	05
1440	109	07
1500	098	08
1560	096	09
1620	091	08
1680	085	08
1740	083	07
1800	074	06
1860	085	06
1920	080	05
1980	084	04
2040	098	04
2100	086	05
2160	090	08
2220		

STATION ALTITUDE 3597.30 FEET MSL
 4 SEP 1979
 ASCENDING 1000 290

SIGNIFICANT LEVEL DATA
 24700.0290
 5 M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 100.42307 LONG DEG

TABLE 7

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUMID.
MILLIBARS	MSL FEET	AIR DEWPOINT DEGREES CENTIGRADE	PERCENT
878.0	3997.3	26.0	80.0
873.2	4155.2	25.7	51.0
850.0	4931.4	22.3	58.0
824.4	5803.9	20.5	82.0
785.8	7167.1	20.6	45.0
700.0	10413.4	13.8	52.0
639.4	12890.6	7.5	59.0
571.0	15919.2	-5	65.0
542.0	16308.8	-1.1	52.0
511.3	16788.0	-7.7	85.0
500.0	17359.3	-8.5	41.0
488.9	17933.5	-7.1	16.0
468.4	21030.0	-8.0	15.0
460.8	21448.9	-6.9	15.0
400.0	25032.9	-13.9	16.0
330.0	29692.4	-25.2	18.0
300.0	31994.1	-31.8	20.0
282.6	33347.5	-35.7	21.0
255.0	35701.8	-38.9	
250.0	36148.2	-40.1	
200.0	41040.1	-51.3	
165.0	44984.2	-60.2	
150.0	47023.8	-63.9	
135.2	49107.5	-68.1	
125.0	50633.9	-68.7	
114.2	51753.7	-70.0	
111.6	51843.2	-70.6	
105.0	53353.9	-72.8	
100.0	55009.8	-72.5	
90.0	55000.0	-72.5	
88.2	57474.5	-66.0	
80.2	59370.1	-66.6	
70.0	62111.0	-63.6	
50.0	69037.3	-57.3	
30.0	79911.4	-53.3	
20.0	86610.5	-45.0	
12.0	92165.1	-43.0	

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

UPPER AIR DATA
2470000290
S M R

TABLE 8

STATION ALTITUDE 3997.30 FEET MSL
4 SEP. 79 1015 HRS MST
ASCENSION NO. 290

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SOUND SPEED M/SEC	WIND DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3997.3	873.0	20.0	60.0	1013.6	676.8	00	0	1.0000311
4000.0	877.9	26.0	59.8	1013.5	676.7	310.5	0	1.0000311
4500.0	862.8	24.2	54.1	1003.6	674.2	310.5	0	1.0000294
5000.0	848.0	22.2	58.3	993.4	671.6	310.5	1.9	1.0000289
5500.0	833.2	21.1	60.6	979.0	670.0	310.5	2.8	1.0000285
6000.0	818.7	20.5	59.6	964.8	669.6	305.0	3.2	1.0000278
6500.0	804.5	20.6	53.3	948.4	669.7	249.0	3.7	1.0000268
7000.0	790.4	20.6	47.1	932.3	669.5	233.5	4.6	1.0000258
7500.0	776.5	19.9	45.7	916.3	668.3	232.5	4.3	1.0000252
8000.0	762.8	18.9	46.8	905.5	667.4	291.5	4.0	1.0000247
8500.0	749.4	17.8	47.9	892.8	666.2	327.1	7.6	1.0000243
9000.0	736.1	16.8	49.0	880.3	664.9	341.0	9.9	1.0000238
9500.0	723.1	15.7	50.0	868.0	663.7	349.5	12.1	1.0000234
10000.0	710.4	14.7	51.1	855.9	662.4	352.0	12.1	1.0000230
10500.0	697.8	13.6	52.1	844.1	661.1	354.5	11.7	1.0000226
11000.0	685.2	12.3	52.9	832.7	659.0	350.1	9.9	1.0000221
11500.0	672.8	11.0	53.8	821.4	658.1	357.5	8.1	1.0000216
12000.0	660.7	9.8	54.6	810.4	656.5	358.0	6.2	1.0000212
12500.0	648.7	8.5	55.4	799.5	655.0	352.5	4.2	1.0000208
13000.0	636.9	7.2	56.3	788.7	653.4	340.0	2.3	1.0000203
13500.0	625.1	5.9	57.6	777.9	651.0	330.7	1.6	1.0000199
14000.0	613.5	4.6	59.3	767.2	650.2	347.9	1.7	1.0000196
14500.0	602.2	3.3	60.8	756.7	648.0	13.7	2.7	1.0000192
15000.0	591.0	1.9	62.3	746.3	647.0	24.5	4.4	1.0000188
15500.0	580.0	0.6	63.8	736.1	645.4	24.5	6.4	1.0000185
16000.0	569.2	0.0	62.3	725.9	643.9	23.9	8.5	1.0000180
16500.0	558.5	-1.6	53.0	715.1	642.0	9.0	10.1	1.0000174
17000.0	547.8	-2.9	55.0	704.9	641.0	358.7	11.9	1.0000171
17500.0	537.3	-4.3	58.2	694.9	639.4	345.5	12.8	1.0000168
18000.0	527.1	-5.8	60.9	685.1	637.8	335.5	13.9	1.0000166
18500.0	517.0	-6.9	63.5	673.4	636.2	330.7	14.8	1.0000163
19000.0	507.1	-8.0	66.1	665.3	634.8	330.0	14.3	1.0000158
19500.0	497.3	-8.2	64.9	655.1	634.5	340.5	13.2	1.0000152
20000.0	487.6	-7.2	65.9	650.4	633.5	1	13.4	1.0000145
20500.0	478.2	-7.6	65.5	627.0	633.0	12.7	14.5	1.0000143
21000.0	468.9	-8.0	65.0	615.0	634.5	10.7	15.0	1.0000140
21500.0	459.9	-7.0	65.0	601.7	633.7	8.9	16.1	1.0000137
22000.0	450.9	-6.0	65.2	586.1	634.5	5.5	17.3	1.0000135
22500.0	442.1	-5.0	65.3	582.7	633.4	3.9	18.0	1.0000132
23000.0	433.4	-4.0	65.4	573.4	632.2	350.0	19.2	1.0000130

STATION ALTITUDE 3997.30 FEET MSL
 8 SEP 79
 ASCENSION NO. 250

UPPER AIR DATA
 2470000290
 S M R

GEOMETRIC COORDINATES
 32.4034 LAT DEG
 106.42307 LONG DEG

TABLE 8 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
43500.0	425.0	-10.9	15.6	564.3	611.0	354.0	1.000128
44000.0	416.6	-11.9	15.7	555.4	629.8	356.9	1.000126
44500.0	408.5	-12.9	15.9	546.5	648.5	359.0	1.000124
45000.0	400.5	-13.8	16.0	537.4	667.4	361.7	1.000122
45500.0	392.4	-15.0	16.2	529.5	686.0	364.0	1.000120
46000.0	384.5	-16.2	16.4	521.2	704.5	366.2	1.000118
46500.0	376.7	-17.5	16.6	513.1	723.0	368.4	1.000116
47000.0	369.0	-18.7	16.8	505.1	741.5	370.6	1.000114
47500.0	361.6	-19.9	17.1	497.3	760.1	372.8	1.000112
48000.0	354.3	-21.1	17.3	489.6	778.6	375.0	1.000110
48500.0	347.1	-22.3	17.5	482.0	797.1	377.2	1.000108
49000.0	340.1	-23.5	17.7	474.5	815.6	379.4	1.000107
49500.0	333.2	-24.7	17.9	467.2	834.1	381.6	1.000105
50000.0	326.3	-26.1	18.3	460.0	852.6	383.8	1.000103
50500.0	319.5	-27.5	18.7	453.0	871.1	386.0	1.000102
51000.0	312.8	-29.0	19.1	446.2	889.6	388.2	1.000100
51500.0	306.2	-30.4	19.6	439.4	908.1	390.4	1.000098
52000.0	299.8	-31.8	20.0	432.8	926.6	392.6	1.000097
52500.0	293.4	-33.3	20.4	426.0	945.1	394.8	1.000095
53000.0	287.1	-34.7	20.7	419.4	963.6	397.0	1.000094
53500.0	280.9	-36.9	19.6**	412.5	982.1	399.2	1.000092
54000.0	274.8	-38.6	15.2**	405.7	1000.6	401.4	1.000090
54500.0	268.8	-40.3	10.7**	399.0	1019.1	403.6	1.000089
55000.0	263.0	-42.9	6.3**	392.3	1037.6	405.8	1.000087
55500.0	257.3	-45.6	1.8**	385.6	1056.1	408.0	1.000085
56000.0	251.0	-48.3		378.9	1074.6	410.2	1.000084
56500.0	245.0	-50.9		372.2	1093.1	412.4	1.000082
57000.0	240.5	-53.6		365.5	1111.6	414.6	1.000081
57500.0	235.1	-56.9		358.8	1130.1	416.8	1.000079
58000.0	229.8	-60.2		352.1	1148.6	419.0	1.000078
58500.0	224.5	-63.5		345.4	1167.1	421.2	1.000077
59000.0	219.5	-66.8		338.7	1185.6	423.4	1.000075
59500.0	214.6	-70.1		332.0	1204.1	425.6	1.000074
60000.0	209.3	-73.4		325.3	1222.6	427.8	1.000073
60500.0	204.0	-76.7		318.6	1241.1	430.0	1.000071
61000.0	198.7	-80.0		311.9	1259.6	432.2	1.000070
61500.0	193.4	-83.3		305.2	1278.1	434.4	1.000069
62000.0	188.1	-86.6		298.5	1296.6	436.6	1.000067
62500.0	182.8	-90.0		291.8	1315.1	438.8	1.000066
63000.0	177.5	-93.3		285.1	1333.6	441.0	1.000065
63500.0	172.2	-96.6		278.4	1352.1	443.2	1.000064
64000.0	166.9	-100.0		271.7	1370.6	445.4	1.000062
64500.0	161.6	-103.3		265.0	1389.1	447.6	1.000061
65000.0	156.3	-106.6		258.3	1407.6	449.8	1.000060
65500.0	151.0	-110.0		251.6	1426.1	452.0	1.000059
66000.0	145.7	-113.3		244.9	1444.6	454.2	1.000058
66500.0	140.4	-116.6		238.2	1463.1	456.4	1.000057
67000.0	135.1	-120.0		231.5	1481.6	458.6	1.000056
67500.0	129.8	-123.3		224.8	1500.1	460.8	1.000055
68000.0	124.5	-126.6		218.1	1518.6	463.0	1.000054
68500.0	119.2	-130.0		211.4	1537.1	465.2	1.000053
69000.0	113.9	-133.3		204.7	1555.6	467.4	1.000052
69500.0	108.6	-136.6		198.0	1574.1	469.6	1.000051
70000.0	103.3	-140.0		191.3	1592.6	471.8	1.000050
70500.0	98.0	-143.3		184.6	1611.1	474.0	1.000049
71000.0	92.7	-146.6		177.9	1629.6	476.2	1.000048
71500.0	87.4	-150.0		171.2	1648.1	478.4	1.000047
72000.0	82.1	-153.3		164.5	1666.6	480.6	1.000046
72500.0	76.8	-156.6		157.8	1685.1	482.8	1.000045
73000.0	71.5	-160.0		151.1	1703.6	485.0	1.000044
73500.0	66.2	-163.3		144.4	1722.1	487.2	1.000043
74000.0	60.9	-166.6		137.7	1740.6	489.4	1.000042
74500.0	55.6	-170.0		131.0	1759.1	491.6	1.000041
75000.0	50.3	-173.3		124.3	1777.6	493.8	1.000040
75500.0	45.0	-176.6		117.6	1796.1	496.0	1.000039
76000.0	39.7	-180.0		110.9	1814.6	498.2	1.000038
76500.0	34.4	-183.3		104.2	1833.1	500.4	1.000037
77000.0	29.1	-186.6		97.5	1851.6	502.6	1.000036
77500.0	23.8	-190.0		90.8	1870.1	504.8	1.000035
78000.0	18.5	-193.3		84.1	1888.6	507.0	1.000034
78500.0	13.2	-196.6		77.4	1907.1	509.2	1.000033
79000.0	7.9	-200.0		70.7	1925.6	511.4	1.000032
79500.0	2.6	-203.3		64.0	1944.1	513.6	1.000031
80000.0		-206.6		57.3	1962.6	515.8	1.000030
80500.0		-210.0		50.6	1981.1	518.0	1.000029
81000.0		-213.3		43.9	2000.6	520.2	1.000028
81500.0		-216.6		37.2	2019.1	522.4	1.000027
82000.0		-220.0		30.5	2037.6	524.6	1.000026
82500.0		-223.3		23.8	2056.1	526.8	1.000025
83000.0		-226.6		17.1	2074.6	529.0	1.000024
83500.0		-230.0		10.4	2093.1	531.2	1.000023
84000.0		-233.3		3.7	2111.6	533.4	1.000022
84500.0		-236.6			2130.1	535.6	1.000021
85000.0		-240.0			2148.6	537.8	1.000020
85500.0		-243.3			2167.1	540.0	1.000019
86000.0		-246.6			2185.6	542.2	1.000018
86500.0		-250.0			2204.1	544.4	1.000017
87000.0		-253.3			2222.6	546.6	1.000016
87500.0		-256.6			2241.1	548.8	1.000015
88000.0		-260.0			2259.6	551.0	1.000014
88500.0		-263.3			2278.1	553.2	1.000013
89000.0		-266.6			2296.6	555.4	1.000012
89500.0		-270.0			2315.1	557.6	1.000011
90000.0		-273.3			2333.6	559.8	1.000010
90500.0		-276.6			2352.1	562.0	1.000009
91000.0		-280.0			2370.6	564.2	1.000008
91500.0		-283.3			2389.1	566.4	1.000007
92000.0		-286.6			2407.6	568.6	1.000006
92500.0		-290.0			2426.1	570.8	1.000005
93000.0		-293.3			2444.6	573.0	1.000004
93500.0		-296.6			2463.1	575.2	1.000003
94000.0		-300.0			2481.6	577.4	1.000002
94500.0		-303.3			2500.1	579.6	1.000001
95000.0		-306.6			2518.6	581.8	1.000000

** IF LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
 9 SEP 79
 ASCENSION NO. 290

UPPER AIR DATA
 247000Z290
 S M H

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 9 (CONT)

GEOMETRIC ALTITUDE MSE FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	ANGLE OF DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
43500.0	177.9	-56.8		28.6	573.0	328.0	21.7	1.000064
4400.0	173.7	-58.0		281.3	571.5	329.2	20.3	1.000063
44500.0	169.7	-59.1		270.1	570.0	330.7	18.6	1.000061
45000.0	165.7	-60.2		271.0	568.5	332.0	16.6	1.000060
45500.0	161.6	-61.1		265.6	567.3	334.8	14.7	1.000059
46000.0	157.7	-62.0		260.3	566.0	337.2	12.9	1.000058
46500.0	153.9	-63.0		255.1	564.8	340.5	11.1	1.000057
47000.0	150.2	-63.9		250.0	563.6	339.5	10.7	1.000056
47500.0	146.5	-64.9		245.0	562.2	338.4	10.3	1.000055
48000.0	142.9	-65.9		240.1	560.9	338.0	10.1	1.000053
48500.0	139.3	-66.9		235.3	559.5	338.1	9.9	1.000052
49000.0	135.9	-67.9		230.8	558.1	338.1	8.7	1.000051
49500.0	132.5	-68.3		225.3	557.7	338.1	6.2	1.000050
50000.0	129.2	-68.4		219.9	557.4	333.0	3.7	1.000049
50500.0	126.0	-68.6		214.6	557.1	307.0	1.8	1.000048
51000.0	122.8	-69.3		209.9	556.2	229.2	2.0	1.000047
51500.0	119.7	-70.2		205.5	555.0	200.3	3.6	1.000046
52000.0	116.7	-70.6		200.7	554.4	203.3	4.4	1.000045
52500.0	113.8	-70.9		195.7	554.4	201.2	5.1	1.000044
53000.0	110.9	-71.9		191.0	554.0	210.5	5.4	1.000043
53500.0	108.1	-72.8		185.2	552.7	230.5	6.1	1.000042
54000.0	105.3	-72.8		183.2	551.4	240.1	6.1	1.000041
54500.0	102.7	-72.6		178.4	551.6	249.1	6.1	1.000040
55000.0	100.1	-72.5		173.7	551.8	257.3	4.7	1.000039
55500.0	97.5	-72.5		169.3	551.8	263.0	1.6	1.000038
56000.0	95.1	-71.2		164.0	550.0	260.2	2.1	1.000037
56500.0	92.7	-69.5		158.5	550.0	257.0	4.4	1.000035
57000.0	90.3	-67.7		153.2	550.4	102.5	7.9	1.000034
57500.0	88.1	-66.0		148.1	550.7	112.7	11.9	1.000033
58000.0	85.9	-66.2		144.6	550.5	124.4	16.4	1.000032
58500.0	83.8	-66.3		141.1	550.3	130.5	22.3	1.000031
59000.0	81.7	-66.5		137.6	550.1	131.5	21.5	1.000031
59500.0	79.7	-65.9		134.3	550.1	131.5	20.5	1.000030
60000.0	77.8	-65.4		130.7	550.3	131.5	18.5	1.000029
60500.0	75.8	-64.6		127.2	551.0	131.1	15.5	1.000028
61000.0	74.0	-64.3		123.7	552.3	130.0	13.4	1.000028
61500.0	72.2	-64.3		120.4	553.0	122.1	13.1	1.000027
62000.0	70.4	-63.7		117.1	553.0	123.3	12.8	1.000026
62500.0	68.7	-63.2		114.0	554.4	123.4	12.5	1.000025
63000.0	67.0	-62.6		111.0	555.0	123.3	11.1	1.000025

STATION ALTITUDE 3997.30 FEET MSL
4 SEP 79 1015 HRS MST
ASCENDING NO. 290

UPPER AIR DATA
2470000290
S W R

GEODETIC COORDINATES
32.40034 LAT DEG
100.42307 LONG DEG

TABLE 8 (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (T) DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.4	-62.3			100.1	505.0	131.2	11.7	1.000024
64000.0	65.9	-61.9			105.3	500.3	121.7	12.6	1.000023
64500.0	62.3	-61.4			102.0	500.9	115.2	13.9	1.000023
65000.0	60.8	-61.0			99.9	567.5	107.0	15.2	1.000022
65500.0	59.4	-60.5			97.3	568.1	107.5	15.7	1.000022
66000.0	58.0	-60.1			94.7	568.7	107.5	16.3	1.000021
66500.0	56.6	-59.6			92.3	569.3	100.8	15.9	1.000021
67000.0	55.2	-59.2			89.9	569.9	105.1	14.8	1.000020
67500.0	53.9	-58.7			87.5	570.5	105.2	13.8	1.000019
68000.0	52.6	-58.2			85.2	571.1	97.5	12.5	1.000019
68500.0	51.3	-57.8			83.0	571.7	87.1	11.4	1.000018
69000.0	50.1	-57.3			80.9	572.3	78.4	11.1	1.000018
69500.0	48.9	-57.1			78.9	572.8	78.4	12.0	1.000018
70000.0	47.8	-56.9			77.0	572.8	79.3	12.8	1.000017
70500.0	46.7	-56.8			75.1	573.1	79.6	13.9	1.000017
71000.0	45.6	-56.6			73.3	573.3	64.2	15.8	1.000016
71500.0	44.5	-56.4			71.5	573.8	67.0	17.7	1.000016
72000.0	43.4	-56.2			68.8	573.8	90.0	19.1	1.000016
72500.0	42.4	-56.0			66.1	574.1	90.0	19.3	1.000015
73000.0	41.4	-55.8			63.4	574.3	90.4	19.6	1.000015
73500.0	40.5	-55.6			64.8	574.8	91.2	19.9	1.000014
74000.0	39.5	-55.5			63.2	574.8	92.5	20.4	1.000014
74500.0	38.6	-55.3			61.7	575.0	93.7	20.9	1.000014
75000.0	37.7	-55.1			60.2	575.3	95.1	21.5	1.000013
75500.0	36.8	-54.9			58.7	575.5	95.5	22.0	1.000013
76000.0	35.9	-54.7			57.3	575.8	97.9	22.5	1.000013
76500.0	35.1	-54.5			55.9	576.0	98.0	22.9	1.000012
77000.0	34.3	-54.3			54.6	576.3	98.0	23.0	1.000012
77500.0	33.5	-54.2			53.3	576.5	94.1	23.1	1.000012
78000.0	32.7	-54.0			52.0	576.8	91.0	23.2	1.000012
78500.0	31.9	-53.8			50.7	577.0	83.0	23.3	1.000011
79000.0	31.2	-53.6			49.5	577.2	64.5	23.4	1.000011
79500.0	30.4	-53.4			48.3	577.5	63.0	23.6	1.000011
80000.0	29.7	-53.1			47.1	577.9	65.1	24.4	1.000010
80500.0	29.1	-52.8			45.9	578.5	67.2	25.0	1.000010
81000.0	28.4	-52.2			44.0	579.1	69.2	25.7	1.000010
81500.0	27.8	-51.7			43.7	579.7	91.3	26.5	1.000010
82000.0	27.1	-51.2			42.6	580.3	93.5	27.4	1.000009
82500.0	26.5	-50.8			41.5	581.0	94.9	28.2	1.000009
83000.0	25.9	-50.3			40.5	581.0	94.0	29.1	1.000009

STATION ALTITUDE 3997.30 FEET MSL
 4 SEP. 79
 ASCENSION NO. 290

UPLK AIR DATA
 2470000256
 S M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 8 (CONT)

GEOMETRIC ALTITUDE (MSL FEET)	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	ANGLE OF REFRACTION DEGREES (W)	SPEED KNOTS	INDEX OF REFRACTION
63500.0	25.3	-49.8		39.5	582.2	94.4	30.0	1.000009
64000.0	24.7	-49.4		39.5	582.6	94.1	30.9	1.000009
64500.0	24.2	-48.9		37.6	583.4	95.1	32.4	1.000008
65000.0	23.6	-48.4		38.6	584.0	98.1	34.0	1.000008
65500.0	23.1	-47.9		35.7	584.6	97.1	35.6	1.000008
66000.0	22.6	-47.5		34.8	585.3	97.9	36.5	1.000008
66500.0	22.0	-47.0		34.0	585.9	98.4	36.4	1.000008
67000.0	21.5	-46.5		33.1	586.5	99.0	36.4	1.000007
67500.0	21.1	-46.1		32.3	587.1	99.3	36.1	1.000007
68000.0	20.6	-45.6		31.5	587.7	98.4	34.7	1.000007
68500.0	20.1	-45.1		30.7	588.3	97.5	33.2	1.000007
69000.0	19.7	-44.9		30.0	588.5	96.5	31.7	1.000007
69500.0	19.2	-44.8		29.3	588.7	96.1	30.5	1.000007
90000.0	18.8	-44.7		28.7	588.8	95.9	29.4	1.000006
90500.0	18.4	-44.6		28.0	588.9	95.7	28.2	1.000006
91000.0	18.0	-44.5		27.4	589.0	96.1	27.2	1.000006
91500.0	17.6	-44.4		26.8	589.2	97.0	26.2	1.000006
92000.0	17.2	-44.4		26.2	589.3	99.2	25.2	1.000006
92500.0	16.8	-44.3		25.6	589.4	101.0	24.3	1.000006
93000.0	16.4	-44.2		25.0	589.5	99.9	24.1	1.000006
93500.0	16.1	-44.1		24.4	589.6	98.7	24.0	1.000005
94000.0	15.7	-44.0		23.9	589.6	97.6	24.0	1.000005
94500.0	15.3	-43.9		23.3	589.9	97.0	24.8	1.000005
95000.0	15.0	-43.8		22.8	590.0	98.5	26.3	1.000005
95500.0	14.7	-43.7		22.3	590.1	99.2	27.8	1.000005
96000.0	14.3	-43.6		21.8	590.3			1.000005
96500.0	14.0	-43.5		21.3	590.4			1.000005
97000.0	13.7	-43.4		20.8	590.5			1.000005
97500.0	13.4	-43.3		20.3	590.6			1.000005
98000.0	13.1	-43.2		19.9	590.8			1.000004
98500.0	12.8	-43.1		19.4	590.9			1.000004
99000.0	12.5	-43.0		18.9	591.0			1.000004

STATION ALTITUDE 3997.30 FEET MSL
 4 SEP. 79
 ASCENSION NO. 290

MANDATORY LEVELS
 24700.0290
 S M R

GEODETTIC COORDINATES
 32.48034 LAT DEG
 106.42307 LONG DEG

TABLE 9

PRESSURE GEOPO. ENTIAL			TEMPERATURE		REL. HUM. PERCENT	WIND DATA		
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE	DIRECTION DEGREES (IN)		SPEED KNOTS		
850.0	4928.	22.3	13.0	58.	316.5	1.7		
800.0	6653.	20.6	10.2	51.	238.7	4.3		
750.0	8478.	17.9	6.7	48.	226.4	7.5		
700.0	10403.	13.6	4.1	52.	354.0	12.0		
650.0	12436.	8.6	.2	55.	353.1	4.4		
600.0	14569.	3.0	-3.8	61.	10.9	3.0		
550.0	16880.	-2.7	-10.4	55.	1.0	11.6		
500.0	19332.	-8.5	-19.3	41.	342.8	13.4		
450.0	22022.	-8.1	-29.9	15.	3.0	13.5		
400.0	24991.	-13.9	-34.2	16.	.8	14.5		
350.0	28267.	-21.8	-40.0	17.	343.5	13.6		
300.0	31914.	-31.8	-47.1	20.	337.1	20.3		
250.0	36068.	-40.1			324.4	18.3		
200.0	40945.	-51.3			322.8	24.2		
175.0	43752.	-57.6			328.8	20.7		
150.0	46895.	-63.9			339.5	10.7		
125.0	50506.	-68.7			288.4	1.5		
100.0	54836.	-72.5			256.9	4.8		
80.0	59228.	-66.5			131.8	20.7		
70.0	61898.	-63.6			133.7	12.8		
60.0	65024.	-60.7			107.7	15.4		
50.0	68776.	-57.3			78.4	11.1		
40.0	73423.	-55.6			91.7	20.1		
30.0	79470.	-53.3			84.2	24.1		
25.0	83355.	-49.6			94.3	30.3		
20.0	88190.	-43.0			97.4	33.0		
15.0	94524.	-43.8			98.4	20.1		